What Is Claimed Is:

1. A propeller shaft assembly comprising a thin-walled tubular member, a connecting member fixed to each end of the tubular member, and a support member fixed within the tubular member, the support member comprising a plurality of radial elements extending a first length (L1) within the tubular member and engaging an interior surface of the tubular member to increase the bending frequency of the propeller shaft assembly.

2. An assembly according to claim 1 wherein said support member comprises a central hub coaxially located within said tubular member and wherein said plurality of radial elements extend from said central hub to said interior surface of said tubular member.

3. An assembly according to claim 1 wherein each radial element includes an enlarged end portion for engaging said tubular member interior surface.

4. An assembly according to claim 3 wherein each end portion includes a groove formed therein for receiving an adhesive.

5. An assembly according to claim 4 wherein said groove extends the first length (L1) of the respective radial element.

6. An assembly according to claim 4 wherein said groove is transverse to the first length (L1) of the respective radial element.

7. An assembly according to claim 1 wherein the number of radial elements is 3 to 8.

8. An assembly according to claim 1 wherein said tubular member comprises metal and said support member comprises metal, plastic, or reinforced plastic.

9. An assembly according to claim 1 wherein each radial element includes a plurality of openings formed along the first length (L1) for reducing the weight of the stiffening member.

10. An assembly according to claim 1 wherein said tubular member has a second length (L2) and the ratio L1/L2 is less than 1.0.

11. An assembly according to claim 1 wherein the connecting members are joint elements or stub shafts.

12. A power transmission shaft comprising a thin-walled metal tube having a joint element or stub shaft fixed to each end thereof, and a support member co-axially located within said tube and engaging an interior surface of said tube, said support member comprising a central hub and a plurality of radial elements extending between said central hub and said interior surface, each of the radial elements including an end portion for engaging said interior surface.

13. A power transmission shaft according to claim 12 wherein the support member has a first length (L1) and said tube has a second length (L2) and the ratio L1/L2 is less than 1.0.

14. A power transmission shaft according to claim13 wherein each radial element extends the first length (L1) of the support member.

15. A power transmission shaft according to claim 12 wherein the number of radial elements is 3 to 8.

16. A power transmission shaft according to claim 12 wherein each end portion includes a groove formed therein for receiving an adhesive.

17. A power transmission shaft according to claim 14 wherein each radial element includes a plurality of openings formed along the first length (L1) for reducing the weight of the stiffening member.

18. A power transmission shaft comprising a thin-walled metal tube having a joint element or stub shaft fixed to each end thereof, and a support member co-axially located within said tube and engaging an interior surface of said tube, said support member comprising a central hub and a plurality of radial elements extending between said central hub and said interior surface, said plurality of radial elements forming opposing pairs of radial elements equally circumferentially spaced around said interior surface.

19. A power transmission shaft according to claim 18 wherein the number of radial elements equals 4 and the number of opposing pairs of radial elements equals 2.

20. A power transmission shaft according to claim 18 wherein the number of radial elements equals 6 and the number of opposing pairs of radial elements equals 3.